



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/590,046

06/15/2007

Taku Hirayama

SHIGA7.055APC

5635

20995

7590

09/26/2008

KNOBBE MARTENS OLSON & BEAR LLP

2040 MAIN STREET

FOURTEENTH FLOOR

IRVINE, CA 92614

EXAMINER

JOHNSON, CONNIE P

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

09/26/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com

eOAPilot@kmob.com

Office Action Summary	Application No. 10/590,046	Applicant(s) HIRAYAMA	
	Examiner CONNIE P. JOHNSON	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/12/08, 6/24/08, 4/8/08 and 8/17/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Status

2. Claims 1-15 are presented.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9, 11 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al., JP 09-160246.

Watanabe teaches a chemically amplified resist composition comprising a compound which has two or more phenolic hydroxyl groups, a photoacid generator and a nitrogen-containing compound (page 10, [0015] and page 25, [0074]). The compound comprising a polyhydric phenol compound with two or more phenolic hydroxyl groups, has a molecular weight of 100 to 1,000 (page 10, [0015]) and has a molecular weight polydispersity of 1.0-1.5 (page 17, [0046]). Compound [DRR10] meets the limitations of a polyhydric phenol compound with two or more phenolic hydroxyl groups as in formula (II) in claim 2 of the present invention (page 39). The polyhydric phenol compounds are protected with acid dissociable groups (page 17, [0046]). The polyhydric phenol

Art Unit: 1795

compound also has 60% or less of unprotected phenolic hydroxyl groups (page 3, [claim 2]). The recitation in claim 1, “an ability to form an amorphous film using a spin coating method,” is intended use. Since Watanabe teaches the resist composition comprising a compound with two or more phenolic hydroxyl groups, a photoacid generator and a nitrogen-containing compound, then the composition of Watanabe would be capable of forming an amorphous film using a spin coating method (MPEP 2106). Watanabe also teaches a method of patterning the resist comprising forming a resist film, prebaking, exposing, post baking and developing the resist with an alkaline solution (page 27, [0081]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al., JP 09-160246 in view of Adegawa et al., JP 2002-312055.

Watanabe teaches a chemically amplified resist composition comprising a compound which has two or more phenolic hydroxyl groups, a photoacid generator and a nitrogen-containing compound (page 10, [0015] and page 25, [0074]). The compound comprising a polyhydric phenol compound with two or more phenolic hydroxyl groups,

Art Unit: 1795

has a molecular weight of 100 to 1,000 (page 10, [0015]) and has a molecular weight polydispersity of 1.0-1.5 (page 17, [0046]). Compound [DRR10] meets the limitations of a polyhydric phenol compound with two or more phenolic hydroxyl groups as in formula (II) in claim 2 of the present invention (page 39). The polyhydric phenol compounds are protected with acid dissociable groups (page 17, [0046]). Watanabe does not teach a polyhydric phenol with the structure of formula 4 in claim 10.

Adegawa teaches a positive resist composition comprising a resin with a structure as in formula (4) of claim 10 in the present invention (page 2, formula 1). The resin comprises a compound with two or more phenolic hydroxyl groups and a molecular weight of 1,000 or less (page 49, [0243]). The composition also comprises a nitrogen-containing compound (page 17, [0081]). Adegawa also teaches the composition comprises a photoacid generator (page 11, [0030]). It would have been obvious to use the polyhydric phenol compound in the resist composition of Watanabe because Adegawa teaches resist compositions comprising a low-molecular weight polyhydric phenol with a structure of formula 1 have improved sensitivity and high resolving power (page 6, [0005]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CONNIE P. JOHNSON whose telephone number is (571)272-7758. The examiner can normally be reached on 7:30am-4:00pm Monday thru Friday.

Art Unit: 1795

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Connie P. Johnson
Examiner
Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795